

Chapter 17: Form and Inquiry Configuration

Files

The configuration files for the inquiry and forms features are provided in **XML** format. In this chapter we illustrate the structure of these configuration files.

We recommend that you read and understand the material in Chapter 15: *Introduction to XML and DTD Files* before delving into the material presented here. Also see Chapter 11: *Configuring and Launching CRL* for a task-oriented approach to configuring the application; it refers you to task-appropriate sections in the current and other chapters.

Some of the XML configuration files listed in this chapter are provided with **CRL** as samples. They may be used as is, edited, copied, or ignored!

17.1 Form Definition Files

The Logbook form definition files govern the form entry types. These files must be located in a directory defined by the `Logbook.file_location.forms_directory` parameter in the properties file (see Chapter 14: *CRL's Java Properties*). The `form.dtd` file must also be present in that directory. The **CRL** administrator can create new forms and add them to the same directory, as long as the XML code contains only valid elements. See section 11.5 *Creating Configuration Files for Forms*.

17.1.1 XML Elements Allowed in Forms

Unlike the other configuration files in CRL, the form definition XML files are not strictly governed by the DTD file, but they do reference it. We have turned off case-sensitivity for form elements and attributes. For consistency and completeness, we list the valid elements in the form of a DTD file. See section 15.3 *Element Types and Attributes in the DTD File* to understand the relationship between DTD and XML files.

```
<?xml version="1.0" encoding="UTF-8" ?>

<!ELEMENT Form ( Line+, REPEATBLOCK*, insertform* ) >
<!ATTLIST Form name CDATA #IMPLIED >
<!ATTLIST Form reload NMTOKEN #IMPLIED >
```

```

<!ELEMENT insertform EMPTY >
<!ATTLIST insertform name NMTOKEN #REQUIRED >
<!ATTLIST insertform reload NMTOKEN #IMPLIED >
<!ATTLIST insertform byReference NMTOKEN #IMPLIED >

<!ELEMENT Line ( Text*, Field*, DateAndTime*, CheckBox*, RadioButtonGroup*, Select*,
List*, TABLE*, EXEC* ) >
<!ATTLIST Line align NMTOKEN #IMPLIED >

<!ELEMENT Text ( #PCDATA ) >

<!ELEMENT CheckBox EMPTY >
<!ATTLIST CheckBox Name CDATA #REQUIRED >
<!ATTLIST CheckBox checked NMTOKEN #REQUIRED >

<!ELEMENT DateAndTime EMPTY >
<!ATTLIST DateAndTime Date NMTOKEN #REQUIRED >
<!ATTLIST DateAndTime Time NMTOKEN #REQUIRED >

<!ELEMENT List ( Text*, Item* ) >
<!ATTLIST List Multiple NMTOKEN #REQUIRED >

<!ELEMENT Item EMPTY >
<!ATTLIST Item Name CDATA #REQUIRED >

<!ELEMENT Field EMPTY >
<!ATTLIST Field Columns NMTOKEN #IMPLIED >
<!ATTLIST Field Rows NMTOKEN #IMPLIED >

<!ELEMENT Option EMPTY >
<!ATTLIST Option Name CDATA #REQUIRED >

<!ELEMENT Select ( Text*, Option* ) >
<!ATTLIST Select Editable NMTOKEN #IMPLIED >

<!ELEMENT RadioButtonGroup ( Text*, RadioButton* ) >
<!ELEMENT RadioButton EMPTY >
<!ATTLIST RadioButton Name NMTOKEN #REQUIRED >
<!ATTLIST RadioButton checked NMTOKEN #REQUIRED >

<!ELEMENT TABLE ( ColumnLabel* ) >
<!ATTLIST Field width CDATA #IMPLIED >
<!ATTLIST Field height CDATA #IMPLIED >

<!ELEMENT EXEC EMPTY >
<!ATTLIST Program CDATA #REQUIRED >

<!ELEMENT ColumnLabel ( DateAndTime*, CheckBox*, Integer*, Double*, Select*, Field* )
>
<!ATTLIST ColumnLabel name CDATA #REQUIRED >

<!ELEMENT Integer EMPTY >

<!ELEMENT Double EMPTY >

<!ELEMENT REPEATBLOCK ( Line* ) >

```

17.1.2 Sample “Start of Shift” Form

```
<?xml version="1.0"?>
```

```

<!DOCTYPE Form SYSTEM "form.dtd">
<Form name="Start of Shift">
  <Line>
    <Text>Time:</Text>
    <Field Rows="1" Columns="20" />
    <Text>    Shift:</Text>
    <Field Rows="1" Columns="21" />
  </Line>
  <Line>
    <Text>Operators at START of Shift:</Text>
    <Field Rows="1" Columns="20" />
  </Line>
  <Line>
    <Text>List of Activities </Text>
    <Field Rows="10" Columns="40" />
  </Line>
</Form>

```

This XML file produces the following **START OF SHIFT** form:

17.1.3 Sample “End of Shift” Form

```

<?xml version="1.0"?>
<!DOCTYPE Form SYSTEM "form.dtd">
<Form name="Summary of Shift">
  <Line>

```

```

        <Text>Time:</Text>
        <Field Rows="1" Columns="20" />
        <Text>      Shift:</Text>
        <Field Rows="1" Columns="21" />
    </Line>
    <Line>
        <Text>Operators at END of Shift:</Text>
        <Field Rows="1" Columns="20" />
    </Line>
    <Line>
        <Text>Summary: </Text>
        <Field Rows="10" Columns="40" />
    </Line>
</Form>

```

This XML file produces the following **SUMMARY OF SHIFT** form:

The screenshot shows a web browser window titled "General Log August 29, 2001". The page content includes:

- Menu: Entries Edit Font Insert Image Check Category
- Date Created: Wednesday, August 29, 2001 3:13:55 PM CDT
- Category: Tutorial/Tutorial
- Topic: General_Log
- Operator: (ENTERED ON ARCHIVE)
- Section: Summary of Shift
- Form fields:
 - Time:
 - Shift:
 - Operators at END of Shift:
 - Summary:

17.1.4 Sample Form using a Variety of Form Elements

This example shows how to implement list boxes, select boxes (dropdown lists), check boxes, radio buttons, program output and date and time in your forms. This file does not come with the default configuration.

Insert the initial lines, plus Form name:

```

<?xml version="1.0"?>
<!DOCTYPE Form SYSTEM "form.dtd">
<Form name="Start of Run">

```

Insert two Date/Time fields; one for date only and one for time only:

```
<Line align="left">
  <Text>Date:</Text>
  <DateAndTime Date="yes" Time="no" />
  <Text> Time:</Text>
  <DateAndTime Date="no" Time="yes" />
```

On the same line, insert a select box for Shift:

```
<Select>
  <Text> Shift: </Text>
  <Option Name="Day" />
  <Option Name="Evening" />
  <Option Name="Night" />
</Select>
</Line>
```

On the next line, insert an editable select box:

```
<Line align="left">
  <Select Editable="yes">
    <Text>Select Box: </Text>
    <Option Name="John Q. Smith" />
    <Option Name="Pierre Auguste Renoir" />
    <Option Name="Claude Monet" />
    <Option Name="Edouard Manet" />
    <Option Name="Edgar Degas" />
  </Select>
```

On the same line, insert two radio buttons, and set one to a default initial value of “on”, the other to “off”; user can select only one of the set:

```
<RadioButtonGroup>
  <Text> Radio Button: </Text>
  <RadioButton Name="ON" checked="on" />
  <RadioButton Name="OFF" checked="off" />
</RadioButtonGroup>
</Line>
```

Insert some more check boxes, and set each to a default initial value of “on” or “off”:

```
<Line align="left">
  <Text>Checkbox: </Text>
  <CheckBox Name="Fast IO" checked="on" />
  <CheckBox Name="Fancy Graphics" checked="on" />
  <CheckBox Name="High Bandwidth" checked="off" />
</Line>
```

Insert a text box:

```
<Line align="left">
  <Text>Text field, 1 row 10 columns:</Text>
  <Field Rows="1" Columns="10" />
```

```
</Line>
```

Insert a list box:

```
<Line align="left">
  <List Multiple="yes">
    <Text>List Box (Impressionists): </Text>
    <Item Name="Van Gogh"/>
    <Item Name="Renoir"/>
    <Item Name="Gauguin"/>
    <Item Name="Monet"/>
  </List>
</Line>
```

Run a program and insert the (text) output into a text area which sizes itself automatically (insert a header line first):

```
<Line align="left">
  <Text>Command output for "arp -a":</Text>
</Line>
<Line align="left">
  <exec Program="arp -a" />
</Line>
```

Close form:

```
</Form>
```

This XML file produces the following **START OF RUN** form:

General DAQ Log November 13, 2002

Entries Edit Font Insert Check Category

Date Created: Wednesday, November 13, 2002 1:59:40 PM CST
Category: Far_Detector_Operation/DAQ_Entry
Topic: General_DAQ_Log
Operator currently signed-in: Anne Heavey
Selected Keywords: :DAQ_ENTRY:

WORDS

Start of Run

Date: Nov 13, 2002 Time: 1:59:41 PM Shift: Day

Select Box: John Q. Smith Radio Button: ON OFF

Checkbox: Fast IO Fancy Graphics High Bandwidth

Text field, 1 row 10 columns: _____

List Box (Impressionists):
Van Gogh
Renoir
Gauguin
Monet

Command output for "arp -a":

```
Interface: 192.168.221.1 on Interface 0x2
Internet Address Physical Address Type
192.168.221.254 00-50-56-c0-48-23 dynamic
Interface: 192.168.142.1 on Interface 0x3
```

17.1.5 Sample Table Element in a Form

Note that the table element is contained within a line element. The table height and width default to 650 and 150, respectively.

```
<Line>
  <Table height="50" width="200">
    <ColumnLabel name="Date">
      <DateAndTime Date="yes" Time="no" />
    </ColumnLabel>
    <ColumnLabel name="Check Box">
      <CheckBox checked="on" />
    </ColumnLabel>
    <ColumnLabel name="Number int">
      <Integer/>
    </ColumnLabel>
    <ColumnLabel name="Number float">
      <Double/>
    </ColumnLabel>
    <ColumnLabel name="Select Box">
      <Select Editable="yes">
        <Option Name="CMSKIN" />
        <Option Name="CMSIM" />
        <Option Name="OOHIT" />
        <Option Name="OODIGIS" />
        <Option Name="NTUPLE" />
      </Select>
    </ColumnLabel>
    <ColumnLabel name="Text">
      <Field/>
    </ColumnLabel>
  </Table>
</Line>
```

Add New Row		Delete Selected Row			
Date	Check Box	Number int	Number float	Select Box	Text
1:49:40 PM	<input type="checkbox"/>	0	0	CMSKIN ▼	

17.1.6 Sample Line for Running a Script or Command

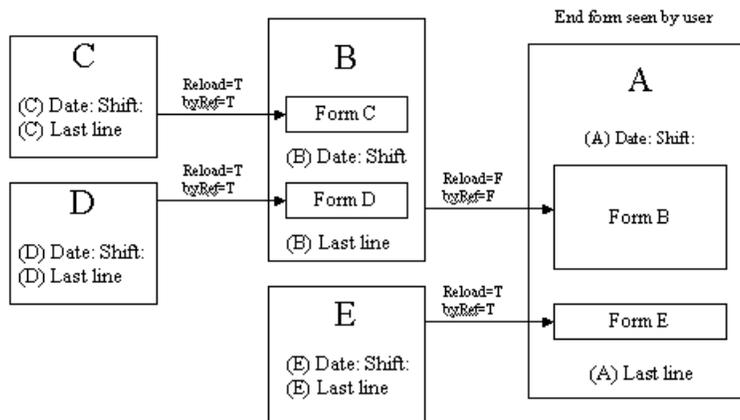
You can run a program within a form using the `EXEC` element with its `Program` attribute. The program can be virtually any type of script (e.g., a Python script), or an OS command. In this example, we execute the command `arp -a`:

```
<?xml version="1.0"?>
<!DOCTYPE Form SYSTEM "form.dtd">
<Form name="...">
  ...
  <Line>
    <EXEC Program="arp -a" />
  </Line>
  ....
</Form>
```

The form automatically sizes the field to accommodate the output.

17.1.7 Sample Form with Embedded Forms

These sample forms provide details for the example discussed in section 11.5.4 *Create Forms with Selected Reloadable Fields*. We recommend that you read that section first. The schematic below illustrates our example:



Form A (The End Form)

This form has two native elements, the Date/Time and Shift line and the LAST LINE. Inbetween these two elements, it inserts two forms, b.xml and e.xml (for B and E), the former with reload and byReference false, and the latter with reload and byReference true.

```
<?xml version="1.0"?>
<!DOCTYPE Form SYSTEM "form.dtd">
```

```

<Form name="AAA">
  <Line>
    <Text>Date:</Text>
    <DateAndTime Date="yes" Time="no" />
    <Text>      Shift:</Text>
    <Field Rows="1" Columns="21" />
  </Line>
  <insertform name="b.xml" reload="false" byReference="false" />
  <insertform name="e.xml" reload="true" byReference="true" />
  <Line>
    <Text>LAST LINE OF AAA</Text>
    <Field Rows="1" Columns="20" />
  </Line>
</Form>

```

Form B (b.xml)

This form has two native elements, the Date/Time and Shift line and the LAST LINE. Above and between these two elements, it inserts two forms, c.xml and d.xml (for C and D), both with reload and byReference true. Form B gets inserted into A with reload and byReference both false.

```

<?xml version="1.0"?>
<!DOCTYPE Form SYSTEM "form.dtd">
<Form name="BBB">
  <insertform name="c.xml" reload="true" byReference="true" />
  <Line>
    <Text>Date:</Text>
    <DateAndTime Date="yes" Time="yes" />
    <Text>      Shift:</Text>
    <Field Rows="1" Columns="21" />
  </Line>
  <insertform name="d.xml" reload="true" byReference="true" />
  <Line>
    <Text>LAST LINE OF BBB</Text>
    <Field Rows="1" Columns="20" />
  </Line>
</Form>

```

Form C (c.xml)

This form has two native elements only, the Date/Time and Shift line and the LAST LINE. It gets inserted into B with reload and byReference both true.

```

<?xml version="1.0"?>
<!DOCTYPE Form SYSTEM "form.dtd">
<Form name="CCC">
  <Line>
    <Text>Date:</Text>
    <DateAndTime Date="yes" Time="yes" />

```

```

    <Text>    Shift:</Text>
    <Field Rows="1" Columns="21" />
</Line>
<Line>
    <Text>LAST LINE OF CCC</Text>
    <Field Rows="1" Columns="20" />
</Line>
</Form>

```

Form D (d.xml)

This form has two native elements only, the Date/Time and Shift line and the LAST LINE. It gets inserted into B with reload and byReference both true.

```

<?xml version="1.0"?>
<!DOCTYPE Form SYSTEM "form.dtd">
<Form name="DDD">
    <Line>
        <Text>Date:</Text>
        <DateAndTime Date="yes" Time="yes"/>
        <Text>    Shift:</Text>
        <Field Rows="1" Columns="21" />
    </Line>
    <Line>
        <Text>LAST LINE OF DDD</Text>
        <Field Rows="1" Columns="20" />
    </Line>
</Form>

```

Form E (e.xml)

This form has two native elements only, the Date/Time and Shift line and the LAST LINE. It gets inserted into A with reload and byReference both true.

```

<?xml version="1.0"?>
<!DOCTYPE Form SYSTEM "form.dtd">
<Form name="EEE">
    <Line>
        <Text>Date:</Text>
        <DateAndTime Date="yes" Time="yes"/>
        <Text>    Shift:</Text>
        <Field Rows="1" Columns="21" />
    </Line>
    <Line>
        <Text>LAST LINE OF EEE</Text>
        <Field Rows="1" Columns="20" />
    </Line>
</Form>

```

How does this look to the user?

First, user creates a logbook entry of the form A type on June 13 at 4:18 p.m. Initially, it looks like this (ignore the aging message):

General Log June 13, 2002

Entries Edit Font Insert Check Category

THIS ENTRY IS AGING - CONSIDER SAVING OR DELETING

Date Created: Thursday, June 13, 2002 4:18:52 PM EDT
Category: Detector/Detector
Topic: General_Log
Operator: (ENTERED ON ARCHIVE)
Selected Keywords: :

AAA

Date: Jun 13, 2002 Shift:

BBB

CCC

Date: Jun 12, 2002, 4:44:10 PM Shift: eeeeeee 333

LAST LINE OF CCC:

Date: Jun 13, 2002, 4:18:53 PM Shift:

DDD

Date: Jun 12, 2002, 4:44:10 PM Shift: dddddd 4444

LAST LINE OF DDD:

LAST LINE OF BBB:

EEE

Date: Jun 12, 2002, 4:44:10 PM Shift: eeeeeeee 555

LAST LINE OF EEE:

LAST LINE OF AAA:

Status: (1) Entries are currently selected

Look at the date/time entries. Forms A and B have the current date/time (B was inserted with reload=false). Forms C, D, and E have an earlier time (they were each reloaded upon insertion into target form).

The user now edits the fields (leaving the date/time fields alone), and archives. The form now looks like this:

General Log June 13, 2002

Entries Edit Font Insert Check Category

Saved Location: /Brlines/2002/06/mont/W13day/18hour/Defector/Defector/General_Log/Form_160
 Date Created: Thursday, June 13, 2002 4:24:15 PM CDT
 Date Saved: Thursday, June 13, 2002 4:27:52 PM CDT
 Sequence Number: 160
 Category: Defector/Defector
 Topic: General_Log
 Operator: Gary Rowdiger
 Selected Keywords: :

ANNOTATE REFRESH

AAA

Date: Jun 13, 2002 Shift: aaaaaaaaa

BBB

CCC

Date: Jun 12, 2002, 4:44:10 PM Shift: cccccc 333

LAST LINE OF CCC ccccccccccc

Date: Jun 13, 2002, 4:24:15 PM Shift: bbbbbbbbbbbbb

DDD

Date: Jun 12, 2002, 4:44:10 PM Shift: ddddd 4444

LAST LINE OF DDD dddddddddddd

LAST LINE OF BBB bbbbbbb also

EEE

Date: Jun 12, 2002, 4:44:10 PM Shift: eeeeeee 555

LAST LINE OF EEE eeeeeeeeee

LAST LINE OF AAA aaaaaa also

Status: (1) Entries are currently selected

Now, user creates another form A. It looks like this initially:

General Log June 13, 2002

Entries Edit Font Insert Check Category

Date Created: Thursday, June 13, 2002 4:28:33 PM CDT
 Category: Defector/Defector
 Topic: General_Log
 Operator: (ENTERED ON ARCHIVE)
 Selected Keywords: :

AAA

Date: Jun 13, 2002 Shift:

BBB

CCC

Date: Jun 12, 2002, 4:44:10 PM Shift: cccccc 333

LAST LINE OF CCC ccccccccccc

Date: Jun 13, 2002, 4:28:33 PM Shift:

DDD

Date: Jun 12, 2002, 4:44:10 PM Shift: ddddd 4444

LAST LINE OF DDD dddddddddddd

LAST LINE OF BBB

EEE

Date: Jun 12, 2002, 4:44:10 PM Shift: eeeeeee 555

LAST LINE OF EEE eeeeeeeeee

LAST LINE OF AAA

Status: (1) Entries are currently selected

Notice that A and B again reflect an updated time (well, you can't actually tell for A since the time doesn't show) and that the other A and B fields are cleared. E, C, and D all wrote their values to the reload area upon archive (byReference=true) and reloaded the new information (reload=true) into A or B.

17.2 The Logbook Inquiry Configuration File

The Logbook inquiry configuration file governs the fields on which you can query when using the inquiry feature described in section 8.2 *Inquiries*.

17.2.1 DTD File Listing for Inquiries

```
<?xml encoding="US-ASCII"?>
<!ELEMENT LogBookReports (filter*)>
<!ELEMENT filter EMPTY>
<!ATTLIST filter
    class CDATA #REQUIRED
    name CDATA #REQUIRED
    type CDATA #REQUIRED>
```

17.2.2 Default XML File Listing for Inquiries

```
<?xml version="1.0"?>
<!DOCTYPE LogBookInquiryConfig SYSTEM "LogBookInquiryConfig.dtd">
<LogBookReports >

    <filter type="entry" name="Operators" class="logbook.logdbms.FilterOperator"/>
    <filter type="entry" name="Entry Type" class="logbook.logdbms.FilterEntryType"/>
    <filter type="entry" name="Date/Time" class="logbook.logdbms.FilterDate"/>
    <filter type="entry" name="Keywords" class="logbook.logdbms.FilterKeyword"/>
    <filter type="entry" name="Category" class="logbook.logdbms.FilterCategory"/>
    <filter type="entry" name="Word Search" class="logbook.logdbms.FilterWordSearch"/>

</LogBookReports >
```

Notice that the names in the above code (e.g., name="Operators") match the search categories in the **INQUIRIES** window:

Search Entries

Inquiries LogEntry Explorer

Keywords	Category	Word Search
Date/Time	Entry Type	Operators
Either Search for Entries Specifying Last XX Hours For last <input type="text" value="8.0"/> hours until NOW.		
Or Search for Entries Specifying FROM and TO		
Entries FROM		
From Date: (MM/DD/YYYY)	<input type="text" value="08/29/2001"/>	
From Time:	<input type="text" value="07:56:17 AM"/>	
Entries TO		
To Date: (MM/DD/YYYY)	<input type="text" value="08/29/2001"/>	
To Time:	<input type="text" value="15:56:17 PM"/>	

Execute Inquiry

Found 0

Save Inquiry As

Restore Inquiry

